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JAMES M. STOVER
TERADATA CORPORATION
2835 MIAMI VILLAGE DRIVE
MIAMISBURG, OH 45342

EXAMINER	
FLEISCHER, MARK A	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/735,483
Filing Date: December 12, 2003
Appellant(s): SMYTH ET AL.

James M. Stover
Reg. No. 32,759

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 26 March 2009 appealing from the Office action mailed 18 June 2008.

(1) Real Party in Interest

Examiner acknowledges the real party in interest to be the present assignee Teradata US, Incorporated.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in Appellant's brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

- Nau, "Time Series Forecasting in Statgraphics", 2002 from url http://www.duke.edu/~rnau/411sgfor.htm updated on the web March 18, 2002.

- D.Bunn and A. Vassilopoulos, "Comparison of seasonal estimation methods in multi-item short-term forecasting", 1999, Elsevier, International Journal of Forecasting, Vol. 15; pages 43 1-443

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

   > (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nau (*Time Series Forecasting in Statgraphics, 2002*) in view of .Bunn (*Comparison of seasonal estimation methods in multi-item short-term forecasting, YEAR*).

Claim 1:

Nau teaches computer implemented methods and associated computer readable program code for forecasting product demand with seasonality effects and further discloses and/or describes the following limitations, as shown:

- *comparing the historical [weekly] sales data for one of said plurality of products obtained from said data warehouse with each one of said [seasonal] models stored within said computer storage device;* (Nau describes use of Stratgraphics software for forecasting and further states: “Model Comparisons: One text report that is particularly interesting (and unique to Statgraphics) is the Model Comparison report [...] which gives side-by-side statistical

comparisons of all models fitted, both in-sample and out-of-sample, plus a summary table of residual diagnostic test results. This report is a very powerful tool for comparing models […]" (emphasis added)) *for each comparison between the historical weekly sales data for said one of said plurality of products and one of said [seasonal] models, calculating a variance* (Nau, on page 2: "Look to see which models are best in-sample and which are best out-of-sample in terms of mean squared error, mean absolute percentage error, etc." (emphasis added))*; and*

- *associating said one of said plurality of products with the [seasonal] model having the smallest variance associated therewith* (Nau, page 2: "In general, *the smaller and more random the errors, the better*, but you should not always slavishly pick the model that is "best in the rankings": there are other factors to weigh as well." (emphasis added).)

Nau does not specifically teach the methods relating to the storing of seasonal models *per se,* but Bunn, in an analogous art, as shown, does.

- *storing within an electronic data warehouse* (see at least Bunn (1999) p. 431, first sentence: "…product re-ordering and inventory management is now well developed in terms of data base design…", and p.442: "large-scale analyses still need to be undertaken to develop robust grouping and estimation facilities within the very large *database* software which characterise commercial practice in this area." (emphasis added) and where 'database software' indicates an *electronic data warehouse*) *historical weekly sales data for said plurality of products* (see at least Bunn (1999) p.432, para 1: "Alternatively, Withycombe (1989) ('WGSI') combines the *historical data* for all *products* within a group by adding their unit demands for each time period." Bunn further describes different time periods, specifically at the top of page 432: "…are revised less frequently than level and trend estimates in normal adaptive forecasting methods (yearly rather than monthly or **weekly**)…" Emphasis added.).
- *storing within a computer storage device [defining] a plurality of seasonal models* (see the text in the preceding limitation rejection)*, each one of said seasonal models modeling an annual sales pattern for a group of products associated with said one of said seasonal*

models, [and computer readable program code]; (see the text in the preceding limitation rejection and at least Bunn p.432: "This group seasonal index is subsequently used for all items belonging to the group." (emphasis added)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the model development, definition and comparison methods described in Nau with the methods for determining seasonality indices of Bunn as it is well-known and commonplace in the forecasting arts to utilize seasonality models and indices that account for seasonality effects, as such models tend to be revised less frequently, and are "often used in business practice" (Bunn, p. 432, col.1). Furthermore, selecting a particular model from among an ensemble of models, that yield the smallest random errors, and thereby associate historical data with a particular model, is a well-known and commonplace practice as these generally provide the most accurate forecasts as noted above (Nau on page 2: "…the better…").

Claim 2

Nau does not specifically teach the following limitations, but Bunn as shown, does:

- *each one of said seasonal models comprises a series of weekly product group seasonal factors, each one of said weekly product group seasonal factors representing a ratio between:*
- *a total historical sales volume for all products in the group of products* (see at least Bunn (1999) p. 432: "Alternatively, Withycombe's (1989) ('WGSI') combines the historical data for all products within a group by adding their unit demands for each time period. Then, the new aggregated series' history is used to estimate the seasonal indices.") *represented by said one of said seasonal models during a one week period; and*
- *an average weekly sales volume for all products in the group of products represented by said one of said seasonal models, said average weekly sales volume being determined over a period of fifty-two consecutive weeks* (see at least Bunn (1999) p. 439: "In order to deseasonalize the data, the classical decomposition technique of multiplicative ratio-to-moving averages was implemented." Examiner notes that determining the average weekly

sales volume 'over a period of fifty-two consecutive weeks' is a **moving average**. Examiner further notes that the term 'decomposition' in the forecasting arts can refer to a seasonality index wherein the numerator of the index is the value of an element in a time series and the denominator is a moving average of those values.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the model development methods of Nau with the methods for determining the seasonality indices of Bunn because the techniques of Nau specifically provide for the specification of models and data input (Nau, p.1) and the definition of seasonality indices of Bunn provide useful seasonality models for which the techniques of Nau allow comparisons, hence indicate the model with the lowest forecasting error. Such use of seasonality models is old and well-known as well as commonplace and the general results and benefits of using the aforementioned seasonality indices would have been predictable.

Claim 3:

Nau does not specifically teach the following limitations, but Bunn as shown, does:

- *calculating a series of weekly product seasonal factors for said one of said plurality of products* (see at least Bunn p. 431, abstract: "This paper addresses the issue of **estimating** seasonal indices for multi-item, short-term forecasting, based upon both individual time series estimates and groups of similar time series." Emphasis added.), *each one of said weekly product seasonal factors representing a ratio between:*
  - *a historical sales volume for said one of said plurality of products during a one week period* (see at least Bunn (1999) p. 432: "Alternatively, Withycombe's (1989) ('WGSI') combines the historical data for all products within a group by adding their unit demands for each time period. Then, the new aggregated series' history is used to estimate the seasonal indices."); *and*
  - *an average weekly sales volume for said one of said plurality of products determined over a period of at least fifty-two consecutive weeks* (see at least Bunn (1999) p. 439: "In order to deseasonalize the data, the classical decomposition technique of multiplicative

ratio-to-moving averages was implemented." Examiner notes that determining the average weekly sales volume 'over a period of fifty-two consecutive weeks' is a **moving average**. Examiner further notes that the term 'decomposition' in the forecasting arts refers to a seasonality index wherein the numerator of the index is the value of an element in a time series and the denominator is a moving average of those values.)*; and*

- *comparing said weekly product seasonal factors for said one of said plurality of products with the weekly product group seasonal factors for said seasonal models for corresponding weeks* (see at least Bunn p. 432, section 2: "The key task in using grouped seasonal indices is the actual formation of the groups. The business reasons for grouping items […] may not be optimal for the statistical purpose of improving short-term forecasts. **A statistical grouping** would be expected **to improve forecast performance, to be intrinsic to the forecasting method,** but in practice probably would need to be maintained alongside the company's traditional hierarchical product line management." Emphasis added. The action of 'statistical grouping', in effect, entails the actions of **comparing** and **associating** time series and models and thereby establishes an equivalence to the limitations above.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the model development, definition and comparison methods described in Nau with the methods for determining seasonality indices of Bunn as it is well-known and commonplace in the forecasting arts to utilize seasonality models and indices that account for seasonality effects, as such models tend to be revised less frequently, and are "often used in business practice" (Bunn, p. 432, col.1). Furthermore, selecting a particular model from among an ensemble of models, that yield the smallest random errors, and thereby associate historical data with a particular model, is a well-known and commonplace practice as these generally provide the most accurate forecasts as noted above (Nau on page 2: "…the better…").

Claim 4:

Nau teaches the following limitations, as shown:

- *computer processing means for comparing historical [weekly] sales data for one of said plurality of products with each one of said seasonal models* (Nau describes use of Stratgraphics software for forecasting and further states: "Model Comparisons: One text report that is particularly interesting (and unique to Statgraphics) is the Model Comparison report […] which gives side-by-side statistical comparisons of all models fitted, both in-sample and out-of-sample, plus a summary table of residual diagnostic test results. This report is a very powerful tool for comparing models […]" (emphasis added)) *for each comparison between the historical weekly sales data for said one of said plurality of products and one of said [seasonal] models, calculating a variance* (Nau, on page 2: "Look to see which models are best in-sample and which are best out-of-sample in terms of mean squared error, mean absolute percentage error, etc." (emphasis added))*; for each comparison between the historical weekly sales data for said one of said plurality of products and one of said seasonal models, calculating a variance; and associating said one of said plurality of products with the seasonal model having the smallest variance associated therewith* (Nau, page 2: "In general, *the smaller and more random the errors, the better*, but you should not always slavishly pick the model that is "best in the rankings": there are other factors to weigh as well." (emphasis added).).

Nau does not specifically teach the system elements *per se,* but Bunn, in an analogous art, as shown, does.

- *an electronic database of historical weekly demand data* (see Bunn p.431-2: "This is because seasonal indices are revised less frequently … (yearly rather than monthly or **weekly**)…" Emphasis added.) *for a plurality of products* (see at least Bunn (1999) p. 431, first sentence: "product re-ordering and inventory management is now well developed in terms of **data base** design…", and p.442: "large-scale analyses still need to be undertaken to develop robust grouping and estimation facilities within the very large **database** software which characterise commercial practice in this area." Emphasis added.);

- *a computer storage device including a plurality of seasonal models, each one of said seasonal models modeling an annual sales pattern for a group of products associated with said one of said seasonal models* (see at least Bunn (1999) p.433 2nd full para.: "First, we use the business classes as given by the company. Second, we form groups of products within the business classes, using cluster analysis.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the model development, definition and comparison means described in Nau with the electronic storage means for storing historical seasonality indices of Bunn as it is well-known and commonplace in the forecasting arts to utilize databases for storing historical data and associated seasonality models (Bunn, p.442, col.1). Moreover, the benefits of combining the computer-based system and methods of Nau with methods pertaining to seasonality indices described in Bunn would have been predictable.

Claim 5:

Nau does not specifically teach the system elements *per se,* but Bunn, in an analogous art, as shown, does.

- *each one of said seasonal models comprises a series of weekly product group seasonal factors, each one of said weekly product group seasonal factors representing a ratio between:*
- *a total historical sales volume for all products in the group of products represented by said one of said seasonal models during a one week period* (see at least Bunn (1999) p. 432: "Alternatively, Withycombe's (1989) ('WGSI') combines the historical data for all products within a group by adding their unit demands for each time period. Then, the new aggregated series' history is used to estimate the seasonal indices.")*; and*
- *an average weekly sales volume for all products in the group of products represented by said one of said seasonal models, said average weekly sales volume being determined over a period of fifty-two consecutive weeks* (see at least Bunn (1999) p. 439: "In order to deseasonalize the data, the classical decomposition technique of multiplicative ratio-to-

moving averages was implemented." Examiner notes that determining the average weekly sales volume 'over a period of fifty-two consecutive weeks' is a **moving average**. Examiner further notes that the term 'decomposition' in the forecasting arts refers to a seasonality index wherein the numerator of the index is the value of an element in a time series and the denominator is a moving average of those values.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the model development, definition and comparison methods described in Nau with the methods for determining seasonality indices of Bunn as it is well-known and commonplace in the forecasting arts to utilize seasonality models and indices that account for seasonality effects, as such models tend to be revised less frequently, and are "often used in business practice" (Bunn, p. 432, col.1).

Claim 6:

Nau does not specifically teach the system elements *per se,* but Bunn, in an analogous art, as shown, does.

- *calculating a series of weekly product seasonal factor for said one of said plurality of products* (see at least Bunn p. 431, abstract: "This paper addresses the issue of **estimating** seasonal indices for multi-item, short-term forecasting, based upon both individual time series estimates and groups of similar time series." Emphasis added.)*, each one of said weekly product seasonal factors representing a ratio between:*
  - *a historical sales volume for said one of said plurality of products during a one week period* (see at least Bunn (1999) p. 432: "Alternatively, Withycombe's (1989) ('WGSI') combines the historical data for all products within a group by adding their unit demands for each time period. Then, the new aggregated series' history is used to **estimate** the seasonal indices." Emphasis added.)*; and*
  - *an average weekly sales volume for said one of said plurality of products determined over a period of at least fifty-two consecutive weeks* (see at least Bunn (1999) p. 439: "In order to deseasonalize the data, the classical decomposition technique of multiplicative

ratio-to-moving averages was implemented." Examiner notes that determining the average weekly sales volume 'over a period of fifty-two consecutive weeks' is a **moving average**. Examiner further notes that the term 'decomposition' in the forecasting arts refers to a seasonality index wherein the numerator of the index is the value of an element in a time series and the denominator is a moving average of those values.)*; and*

- *comparing said weekly product seasonal factors for said one of said plurality of products with the weekly product group seasonal factors for said seasonal models for corresponding weeks* (see at least Bunn p. 432, section 2: "The key task in using grouped seasonal indices is the actual formation of the groups. The business reasons for grouping items […] may not be optimal for the statistical purpose of improving short-term forecasts. **A statistical grouping** would be expected **to improve forecast performance, to be intrinsic to the forecasting method**, but in practice probably would need to be maintained alongside the company's traditional hierarchical product line management." Emphasis added. Examiner notes that the action of 'statistical grouping', in effect, entails the actions of **comparing** and **associating** time series and models and thereby establishes an equivalence to the limitations above.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the model development, definition and comparison methods described in Nau with the methods for determining seasonality indices of Bunn as it is well-known and commonplace in the forecasting arts to utilize seasonality models and indices that account for seasonality effects, as such models tend to be revised less frequently, and are "often used in business practice" (Bunn, p. 432, col.1). Furthermore, selecting a particular model from among an ensemble of models, that yield the smallest random errors, and thereby associate historical data with a particular model, is a well-known and commonplace practice as these generally provide the most accurate forecasts as noted above (Nau on page 2: "…the better…").

(10) Response to Argument

Rejection of claims under 35 U.S.C. §103(a)

Appellant requests review of the above rejections arguing that "The Office has not established a *prima facie* case of obviousness..." by stating that none of the references relied upon "taken singularly or in combination, teach or suggest all of the limitations recited in any one of claims 1 through 6 of the present application." (Appellant's Brief, p.5). Examiner respectfully disagrees and maintains that all of the limitations in the application are taught in the prior art references of record. These references, specifically Nau and Bunn as noted above, are both analogous art with respect to the instant application and thus provide teachings in the field of forecasting and generating forecasting models with seasonality effects (see Nau, p.1 *inter alia* which states "The Forecasting procedure ... and the *Seasonality*..." and Bunn, p.431, title "Comparison of seasonal estimation methods in multi-item short-term forecasting").

(i). Appellant's Arguments with Respect to Nau and Bunn

Appellant argues that the primary reference Nau "was cited as teaching [...] comparing historical weekly sales data for one of said plurality of products obtained from said data warehouse with each one of said seasonal models stored within said computer storage device; for each comparison between the historical weekly sales data for said one of said plurality of products and one of said seasonal models, calculating a variance; and associating said one of said plurality of products with the seasonal model having the smallest variance associated therewith and further argues:

> *"Nau does not teach or suggest a process for 'comparing historical weekly sales data for one of said plurality of products obtained from said data warehouse with each one of said seasonal models stored within said computer storage device;' 'for each comparison between the historical weekly sales data for said one of said plurality of products and one of said seasonal models, calculating a variance;' and 'associating said one of said plurality of products with the seasonal model having the smallest variance*

associated therewith.' These limitations are also not taught or suggested by Bunn, which was cited only as teaching the limitations 'storing within an electronic data warehouse historical weekly sales data for said plurality of products' and 'storing within a computer storage device a plurality of seasonal models, each one of said seasonal models modeling an annual sales pattern for a group of products associated with said one of said seasonal models, and computer readable program code.'" (Appellant's Brief, p.5, 7).

(i)(a) Reliance on Nau

Appellant however mischaracterizes the Examiner's reliance on these references and therefore erroneously argues that their combination does not establish obviousness. As shown in the Final Office Action, the rejections indicate that Nau teaches the actions of comparing a model with data, calculating a variance between time series data and a model, and choosing the model that yields the lowest variance (See Final Action mailed 6/18/08). Nau describes "Model Comparisons: gives side-by-side statistical comparisons of all models fitted" (See Nau, p.2) and further describes the selection criterion for choosing a model: "Look to see which models are best in-sample and which are best out-of-sample in terms of mean squared error, mean absolute percentage error, etc." (Emphasis added—Final Office action. See also Section 9 herein.). Nau, p.2 further states: "In general, *the smaller and more random the errors, the better*, but you should not always slavishly pick the model that is "best in the rankings": there are other factors to weigh as well." (emphasis added---see also the preceding paragraph regarding Bunn) hence effectively establishes an association therefore teaches *associating …* as claimed by Appellant.

Thus, the reliance on Nau demonstrates that those aspects of the claimed invention pertaining to the *comparing* and the *associating … having the smallest variance associated therewith* steps were known in the art (note however that Bunn, p.435, 436, 438, *inter alia*, and also on p. 440 extensively refers to forecasting errors, and variances and further relates mean squared error, mean absolute percentage error and similar statistics to variance. Also, Bunn, p.436, col.1 associates variance-covariance methods with an assessment of approaches that "tend to perform best when the data consists of short time series…" (emphasis added) hence provides a teaching for the model selection criteria).

Contrary to Appellant's position, Nau was *not* relied upon for any teachings relative to products, group product sales models, group sales indices, weekly sales data or seasonality effects as suggested by Appellant's arguments (Note however that Nau p.1 does make a reference to seasonality. Also please note that the Examiner indicated the elements of the limitations not taught by Nau in bracketed terms in the Final Office Action). These elements were clearly shown in the Final Office action (see Section 9 above) to have been taught by Bunn which teaches methods for the analysis and forecasting of group sales with seasonality effects.

Appellant further distinguishes the claimed invention from the teachings of Nau by emphasizing irrelevant teachings of Nau's and contrasting them with the claims and claim elements of the Appellant's application. Appellant expounds on the purposes of Nau and how it pertains to "multiple statistical forecasting models […] Linear Trend model, […] ARIMA […] models…" and so forth all of which are completely irrelevant insofar as how the teaching of Nau was relied on.

(i)(b) Reliance on Bunn

It is noteworthy that Appellant does not traverse the teachings of Bunn with respect to storing group seasonality indices, group seasonality modeling and weekly sales data which are clearly taught. Bunn, p.431-2 refers to "product re-ordering" and "data base design" and recites another reference in text (Withycombe) that elucidates 'historical data for all products within a group" and further refers to the periodicity of the time series data regarding sales. Bunn p.432 also refers to yearly, monthly or weekly periodicity (note also that the concept of periodicity in time series forecasting is obvious) and refers to sales data on p.433, col.1, paragraph 3. Bunn, p.431, col.2 states "this is because seasonal indices are revised less frequently …for a sample of 29 time series from a computer peripherals supplier." (emphasis added) where the seasonal indices constitute a seasonality model. See also Bunn. 433, col. 1-2 which describe items, and seasonal indices which are stored (as computer/statistical analyses are performed). Bunn p.432: "This group seasonal index is subsequently used for all items belonging to the group." (emphasis added). Bunn p.433 refers to a period of time. Finally, Bunn, p.431, col. 1 states "Although

modern commercial software for large-scale, multi-item sales forecasting …" hence reads on *computer readable program code*. Thus, the teachings of Bunn are entirely devoted to the subject of group seasonality modeling based on seasonality indices and contain all of the substantive limitations and limitation elements noted above.

(ii) Establishing Obviousness by Combining Nau and Bunn

Appellant argues that based on their interpretation of what Nau teaches "It is also not seen how the limitations of Bunn can be incorporated into the Statgraphics system described in Nau." (Appellant's Brief, p.7) and therefore argues that obviousness has not been established. The test for obviousness however is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference as Appellants clearly argue nor is the test for obviousness that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). According to *In re Jacoby,* 135 USPQ 317 (CCPA 1962), the skilled artisan is presumed to know something more about the art than only what is disclosed in the applied references. Within *In re Bode,* 193 USPQ 12 (CCPA 1977), every reference relies to some extent on knowledge of persons skilled in the art to complement that which is disclosed therein. In *In re Conrad* 169 USPQ 170 (CCPA), obviousness is not based on express suggestions, but what references taken collectively would suggest.

It is again worth noting that the teachings of Nau and Bunn both pertain to the same field of forecasting of time series data based on models and taking into account seasonality effects (See Nau, paragraph 1, Bunn, title). As shown above, Nau was relied upon for showing that it was known in the art to *compare* a given time series with models and choosing the model that yields the *lowest variance* (see Final Office action regarding claims 1 and 6.). Bunn was relied on for teachings in the area of group sales modeling using seasonality indices or factors and weekly sales data. Thus, both Nau and Bunn teach all of the elements of the claim limitations and the particular elements were clearly indicated in the Final

Office action and clearly indicated in the text and cited passages. As is well settled, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The reliance on Nau and Bunn establish obviousness in the instant case because they are analogous teachings in the field of forecasting with several conceptual and particular overlaps and a number of indicated motivations for their combination. For example, Bunn concerns group seasonality models while Nau also refers to seasonality. Bunn contemplates an assessment among competing models as does Nau where both teach criteria for such assessment based on variance and error levels. Moreover, the obviousness of associating a product with a particular model and of creating a plurality of group seasonality models as taught by Bunn coupled with the weekly sales data also taught by Bunn becomes all the more apparent given that Bunn explicitly contemplates a series of models. Such creation demands that one specific model be selected from among several competing models. Indeed, Bunn states throughout their article the existence of different models and model types out of which one must be selected (see *e.g.,* Bunn [p.438, col.1, *inter alia*] "…if model *i* performed best"). How is such a model to be selected and based upon what criteria? The answer to this obvious question is provided by Nau and based on criteria generally known and understood by those of ordinary skill in the art. The model chosen is the one that yields the lowest error when compared to the data of product sales, *i.e.,* the model with the lowest mean squared error which is analogous to the minimum variance as claimed by the Appellant.

(iii) Conclusion

Thus, the various elements of the claims are taught by either Nau or Bunn or both and their combination does not change or affect the basic teachings of either of these references. Thus, it would have been obvious to one of ordinary skill in the art to include the comparison of a plurality of models and the minimum error selection based on variance of Nau with the group seasonality modeling methods of Bunn since the claimed invention is merely a combination of old elements, and in the combination each element would have performed the same function as it did separately, and one of ordinary skill in the art

would have recognized that the results of the combination were predictable. See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385.

In view of the foregoing, it is apparent that Appellants argument and exhaustive description of the Statgraphics application as described in Nau merely highlight differences between it and the instant application that are of no moment with respect to the combination of concepts and teachings of Nau and Bunn and merely focuses on the peculiar elements of Nau that are irrelevant. Again, the test for obviousness is not whether the features of a secondary reference may be **bodily incorporated** into the structure of the primary reference as Appellants clearly argue, but rather what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

In view of the foregoing reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Mark A Fleischer/

Examiner, Art Unit 3624

/Bradley B Bayat/

Supervisory Patent Examiner, Art Unit 3624

Conferees:

/Bradley B Bayat/

Supervisory Patent Examiner, Art Unit 3624

Vincent Millin/vm/

Appeals Conference Specialist

Claim Mapping for Application 10/735483			
Claim	**Limitation**	**Nau**	**Bunn**
1	storing within an electronic data warehouse historical weekly sales data for said plurality of products;		Bunn (1999) p. 431, first sentence: "…product re-ordering and inventory management is now well developed in terms of data base design…", Bunn (1999) p.432, para 1: "Alternatively, Withycombe (1989) ('WGSI') combines the *historical data* for all *products* within a group …." Bunn, p.432: "(yearly rather than monthly or **weekly**)…" Sales data is further taught on p.433, col.1, para. 3.
	storing within a computer storage device a plurality of seasonal models		see the text in the preceding limitation rejection. Bunn p.431, col.2 states "this is because seasonal indices are revised less frequently …for a sample of 29 time series from a computer peripherals supplier." See also Bunn. 433, col. 1-2 describes items, seasonal indices which are stored (as computer/statistical analyses are performed).
	each one of said seasonal models modeling an annual sales pattern for a group of products associated with said one of said seasonal models, and computer readable program code; and		see the text in the preceding limitation rejection and at least Bunn p.432: "This group seasonal index is subsequently used for all items belonging to the group." (emphasis added). Bunn p.433 for period of time.
	providing said computer readable program code to a processor to perform the steps of: comparing [[the]] historical weekly sales data for one of said plurality of products obtained from said data warehouse with	Nau describes use of Stratgraphics software for forecasting and further states: "Model Comparisons: One text report that is particularly interesting (and unique to Statgraphics) is the Model Comparison report […] which gives side-by-side statistical comparisons of all models fitted, both in-sample and out-of-sample, plus a summary table of residual diagnostic test	Bunn, p.432: "(yearly rather than monthly or **weekly**)…" Sales data is further taught on p.433, col.1, para. 3.

	each one of said seasonal models stored within said computer storage device;	results. This report is a very powerful tool for comparing models […]" (emphasis added)	
	for each comparison between the historical weekly sales data for said one of said plurality of products and one of said seasonal models, calculating a variance; and	Nau, on page 2: "Look to see which models are best in-sample and which are best out-of-sample in terms of mean squared error, mean absolute percentage error, etc." (emphasis added).	
	associating said one of said plurality of products with the seasonal model having the smallest variance associated therewith.	Nau, page 2: "In general, *the smaller and more random the errors, the better*, but you should not always slavishly pick the model that is "best in the rankings": there are other factors to weigh as well." (emphasis added).	